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INFLUENCE OF BOGUS INTELLIGENCE REPORTS ON CONFIDENCE IN SUBSEQUENT REPORTS

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ABSTRACT

Urban Resolve 2005 (UR05) was a human-in-the-loop experiment supported by Joint Semi-automated Forces (JSAF) simulation to replicate operations in an urban setting in 2005. This environment was used to look at how intelligence reports of varying reliability influenced confidence in those reports. Thirty participants replicated Tactical Operation Centers (TOCs) in a division and 2 brigades tasked with maintaining security in an urban setting following combat operations. Participants received intelligence briefings prior to each of eight 2 1/2 hour trials. Four trials presented the base condition with 1 accurate intelligence report and 2 bogus reports. The remaining 4 trials presented the enhanced condition with 2 accurate intelligence reports and 2 bogus reports. Participants knew that 2 reports in each condition were bogus. No significant difference was found between participant's confidence in intelligence reports prior to each trial when comparing the base condition and the enhanced condition suggesting that a higher proportion of bogus reports did not result in reduced confidence. Also, confidence levels did not decrease over trials. Interestingly, most participants tended to treat most intelligence reports as if they were good intelligence despite knowing that at least half of the reports were bogus.

1. INRODUCTION

Military analysts know that information in intelligence reports may be inaccurate or incomplete. Does this uncertainty lead to distrust in intelligence reports? If so, will participants' trust in intelligence information decline when they know that a higher percent of the Intel is bogus?

Breznitz (1984) examined how spurious information influenced trust in subsequent information. He called this phenomenon where operators learned to distrust systems that had been unreliable in the past the cry-wolf phenomenon. Breznitz proposed the Theory of Initial Credibility that states that loss of credibility depends on the initial level of credibility before receiving any false information. Additionally, his Law of Interwarning Similarity states that the more similar true and false signals, the greater the credibility loss for true signals. Based on these theories, the best way to prevent the cry-wolf phenomenon would be to have a system that was believed to be highly credible and have participants who are readily able to discriminate between true and false signals.

This research looked at how analysts rated the reliability of intelligence reports when they knew that ½ or 2/3's of the reports received were bogus. Since all intelligence reports were based on actual reports, it was difficult for participants to determine the veracity of reports. According to Breznitz' theories, operators should not have a high level of confidence in the reports and would have difficulty determining which were true. This would result in increased distrust in subsequent reports.

2. METHOD

2.1 Participants

Active duty military and retired military personnel from the United States Army, Marines, Navy, and Air Force participated in this human-in-the-loop experiment. Although all had military experience, few worked in the intelligence field. Participants assumed the positions of decision makers in tactical operations centers (TOCs) by interacting with the JSAF simulation and with each other. Situational awareness was maintained by placing markers on electronic maps and communication to other TOCs via text chat over the Info-work Space (IWS). Information from sensors was obtained through stationary sensors and aerial sensors that could be directed to areas of interest.

2.2 Physical Set-up

Participants were located in 3 separate rooms composed of the following positions:

Division Command Information Center (CIC): Commander, Operations, Air, Intelligence (2), Collection Manager (2), Counter Intelligence/Human Intelligence (CI/HUMINT), (2), Sensors (2),

Brigade Base Defense Operations Center: Commander, Operations, Intelligence, CI/HUMINT Sensors (2)

Brigade TOC: Commander, Operations, Asst Operations, Intelligence (2), CI/HUMINT.

2.3 Test conditions

UR 2005 was a laboratory experiment consisting of eight 2 1/2 hour trials presented in a simulated environment with participants asked to make decisions based on information from simulated sensors and intelligence briefings and injects. Trials contained a mix of attack types (IED, mortar, ambush) against targets such as convoys, local police, and coalition forces. The Red team executed 152 missions in 16 trials conducted over two weeks. Nine or ten missions were conducted per trial with each mission consisting of 3-to-4 activities.

Two conditions of intelligence were presented. Prior to each of eight 2 1/2 hour trials, participants received an intelligence brief containing either 3 or 4 intelligence reports. In the base case, three reports were given, with 2 of the 3 being bogus. In the enhanced condition, 4 reports were provided with 2 being accurate intelligence and 2 bogus. Participants knew that 2 reports in each condition were bogus. Additional intelligence updates were provided on both the accurate and bogus intelligence during the trial. An explosion event (mortar fire, IED, ambush) occurred for each accurate intelligence report which greatly increased the chance that participants would detect activity.

2.4 Data collection

After receiving the intelligence briefing and before beginning the trial, participants were asked to evaluate the 3 or 4 intelligence reports and rate their confidence that each report was true and rate the importance of the activity reported. At the conclusion of each trial, participants reported whether each report was true, what lead them to believe that it was true or false, and how successful they were in responding to the threat reported. Participants then were debriefed on the accuracy of the intelligence and how well they succeeded in using the intelligence.

To summarize, participants knew before each trial that 2 intelligence reports were bogus, and they were informed which were bogus at the end of each trial. It was hypothesized that participant's confidence in the intelligence reports would decline over the 8 trials and that their confidence in the base condition, where 2/3 of the intelligence reports were bogus, would be lower than in the enhanced condition where 1/2 of the reports were bogus.

3. RESULTS

Results did not support our hypothesis. Confidence in intelligence reports did not decline over time. A significant difference in confidence in intelligence reports was found only between the first and fifth trials (see Figure 1). Both of these trials were the enhanced condition.
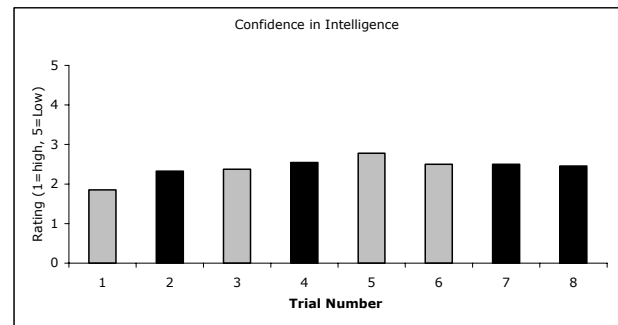

Figure 1. Confidence rating in intelligence reports prior to trial. Trial 1 is significantly higher than Trial 5. Grey bars indicate enhanced condition. Black bars indicate base condition.

Interestingly, participants tended to respond that they were very confident or somewhat confident in the intelligence received (58 percent of the time) and rarely rated their confidence level as not very or not at all confident (14 percent of the time). In other words, they tend to treat most intelligence as if it were good intelligence despite knowing that at least half of the reports were bogus (see Table 1). Participants did not discriminate between true and bogus reports based solely on the intelligence report itself. They identified 29 percent of the true reports as probably true and 29 percent of the bogus reports as probably true.

Table 1. Participant's report of their confidence that intelligence reports were true at the beginning of each trial. Twenty-eight percent of the time they were undecided.

	True (Truth)	Bogus (Truth)
True (Reported)	29 percent	29 percent
Bogus (Reported)	4 percent	10 percent

At the end of each trial, participants were asked if the intelligence reports were true (see Table 2). Again, there was a tendency to report that the intelligence reports were true and the activity did take place, although their level of uncertainty increased.

Table 2. Participants report of whether the intelligence reports were true following each trial. Forty-one percent reported that they did not know if the activity occurred.

	True (Truth)	Bogus (Truth)
True (Reported)	28 percent	20 percent
Bogus (Reported)	2 percent	8 percent

Based on observer report and IWS communication, all attack missions, whether intelligence was provided or not, were detected. Since all missions associated with an intelligence report involved an attack activity, they all were detected. Table 2 indicates that participants were not always aware the mission was detected. Additionally, they reported that 20 percent of the bogus reports were true.

4. SUMMARY

Contrary to the prediction that high levels of bogus intelligence would lead to decreased confidence in intelligence over the trials, no decline in confidence was seen. Each intelligence report described a potential threat and each threat was responded to as if it were real.

These findings highlight the difficulty in interpreting actions in an environment fraught with uncertainty. If participants responded to an intelligence report and nothing happened was it because they thwarted the enemy's activities or was the intelligence incorrect. Blatt (2005) noted that "Wrong information may be more lethal than missing information because it might not be recognized that the information is wrong." (p. 65).

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